

**TABLE 18 Type T Thermocouple**— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
Thermoelectric Voltage in Millivolts												
-450	-6.254	-6.255	-6.256	-6.257	-6.258							-450
-440	-6.240	-6.242	-6.243	-6.245	-6.247	-6.248	-6.250	-6.251	-6.252	-6.253	-6.254	-440
-430	-6.217	-6.220	-6.222	-6.225	-6.227	-6.230	-6.232	-6.234	-6.236	-6.238	-6.240	-430
-420	-6.187	-6.191	-6.194	-6.197	-6.200	-6.203	-6.206	-6.209	-6.212	-6.215	-6.217	-420
-410	-6.150	-6.154	-6.158	-6.162	-6.166	-6.170	-6.173	-6.177	-6.180	-6.184	-6.187	-410
-400	-6.105	-6.110	-6.115	-6.119	-6.124	-6.128	-6.133	-6.137	-6.141	-6.146	-6.150	-400
-390	-6.053	-6.059	-6.064	-6.069	-6.075	-6.080	-6.085	-6.090	-6.095	-6.100	-6.105	-390
-380	-5.994	-6.001	-6.007	-6.013	-6.019	-6.025	-6.030	-6.036	-6.042	-6.047	-6.053	-380
-370	-5.930	-5.937	-5.943	-5.950	-5.956	-5.963	-5.969	-5.976	-5.982	-5.988	-5.994	-370
-360	-5.860	-5.867	-5.874	-5.881	-5.888	-5.896	-5.902	-5.909	-5.916	-5.923	-5.930	-360
-350	-5.785	-5.792	-5.800	-5.808	-5.815	-5.823	-5.830	-5.838	-5.845	-5.853	-5.860	-350
-340	-5.705	-5.713	-5.721	-5.729	-5.737	-5.745	-5.753	-5.761	-5.769	-5.777	-5.785	-340
-330	-5.620	-5.629	-5.638	-5.646	-5.655	-5.663	-5.672	-5.680	-5.688	-5.697	-5.705	-330
-320	-5.532	-5.541	-5.550	-5.559	-5.568	-5.577	-5.585	-5.594	-5.603	-5.612	-5.620	-320
-310	-5.439	-5.448	-5.458	-5.467	-5.476	-5.486	-5.495	-5.504	-5.513	-5.523	-5.532	-310
-300	-5.341	-5.351	-5.361	-5.371	-5.381	-5.391	-5.400	-5.410	-5.420	-5.429	-5.439	-300
-290	-5.240	-5.250	-5.261	-5.271	-5.281	-5.291	-5.301	-5.312	-5.322	-5.332	-5.341	-290
-280	-5.135	-5.145	-5.156	-5.167	-5.177	-5.188	-5.198	-5.209	-5.219	-5.230	-5.240	-280
-270	-5.025	-5.036	-5.048	-5.059	-5.070	-5.081	-5.091	-5.102	-5.113	-5.124	-5.135	-270
-260	-4.912	-4.923	-4.935	-4.946	-4.958	-4.969	-4.980	-4.992	-5.003	-5.014	-5.025	-260
-250	-4.794	-4.806	-4.818	-4.830	-4.842	-4.854	-4.865	-4.877	-4.889	-4.900	-4.912	-250
-240	-4.673	-4.685	-4.698	-4.710	-4.722	-4.734	-4.746	-4.759	-4.771	-4.783	-4.794	-240
-230	-4.548	-4.561	-4.573	-4.586	-4.599	-4.611	-4.624	-4.636	-4.648	-4.661	-4.673	-230
-220	-4.419	-4.432	-4.445	-4.458	-4.471	-4.484	-4.497	-4.510	-4.523	-4.535	-4.548	-220
-210	-4.286	-4.300	-4.313	-4.326	-4.340	-4.353	-4.366	-4.380	-4.393	-4.406	-4.419	-210
-200	-4.149	-4.163	-4.177	-4.191	-4.205	-4.218	-4.232	-4.246	-4.259	-4.273	-4.286	-200
-190	-4.009	-4.023	-4.037	-4.052	-4.066	-4.080	-4.094	-4.108	-4.122	-4.136	-4.149	-190
-180	-3.865	-3.879	-3.894	-3.908	-3.923	-3.937	-3.952	-3.966	-3.980	-3.995	-4.009	-180
-170	-3.717	-3.732	-3.747	-3.762	-3.777	-3.791	-3.806	-3.821	-3.836	-3.850	-3.865	-170
-160	-3.565	-3.581	-3.596	-3.611	-3.626	-3.642	-3.657	-3.672	-3.687	-3.702	-3.717	-160
-150	-3.410	-3.426	-3.441	-3.457	-3.473	-3.488	-3.504	-3.519	-3.535	-3.550	-3.565	-150
-140	-3.251	-3.267	-3.283	-3.299	-3.315	-3.331	-3.347	-3.363	-3.379	-3.394	-3.410	-140
-130	-3.089	-3.105	-3.122	-3.138	-3.154	-3.171	-3.187	-3.203	-3.219	-3.235	-3.251	-130
-120	-2.923	-2.940	-2.956	-2.973	-2.990	-3.006	-3.023	-3.040	-3.056	-3.072	-3.089	-120
-110	-2.754	-2.771	-2.788	-2.805	-2.822	-2.839	-2.856	-2.873	-2.889	-2.906	-2.923	-110
-100	-2.581	-2.598	-2.616	-2.633	-2.651	-2.668	-2.685	-2.702	-2.719	-2.737	-2.754	-100
-90	-2.405	-2.423	-2.440	-2.458	-2.476	-2.493	-2.511	-2.529	-2.546	-2.564	-2.581	-90
-80	-2.225	-2.244	-2.262	-2.280	-2.298	-2.316	-2.334	-2.351	-2.369	-2.387	-2.405	-80
-70	-2.043	-2.061	-2.079	-2.098	-2.116	-2.134	-2.153	-2.171	-2.189	-2.207	-2.225	-70
-60	-1.857	-1.875	-1.894	-1.913	-1.931	-1.950	-1.969	-1.987	-2.006	-2.024	-2.043	-60
-50	-1.667	-1.686	-1.705	-1.724	-1.743	-1.762	-1.781	-1.800	-1.819	-1.838	-1.857	-50
-40	-1.475	-1.494	-1.514	-1.533	-1.552	-1.572	-1.591	-1.610	-1.629	-1.648	-1.667	-40
-30	-1.279	-1.299	-1.319	-1.338	-1.358	-1.378	-1.397	-1.417	-1.436	-1.456	-1.475	-30
-20	-1.081	-1.101	-1.121	-1.141	-1.161	-1.181	-1.200	-1.220	-1.240	-1.260	-1.279	-20
-10	-0.879	-0.900	-0.920	-0.940	-0.960	-0.980	-1.001	-1.021	-1.041	-1.061	-1.081	-10
0	-0.675	-0.695	-0.716	-0.736	-0.757	-0.777	-0.798	-0.818	-0.839	-0.859	-0.879	0

°F	0	1	2	3	4	5	6	7	8	9	10	°F
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**TABLE 18 Type T Thermocouple**— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F

T °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
Thermoelectric Voltage in Millivolts												
0	-0.675	-0.654	-0.633	-0.613	-0.592	-0.571	-0.550	-0.530	-0.509	-0.488	-0.467	0
10	-0.467	-0.446	-0.425	-0.404	-0.383	-0.362	-0.341	-0.320	-0.299	-0.278	-0.256	10
20	-0.256	-0.235	-0.214	-0.193	-0.171	-0.150	-0.129	-0.107	-0.086	-0.064	-0.043	20
30	-0.043	-0.022	0.000	0.022	0.043	0.065	0.086	0.108	0.130	0.151	0.173	30
40	0.173	0.195	0.216	0.238	0.260	0.282	0.303	0.325	0.347	0.369	0.391	40
50	0.391	0.413	0.435	0.457	0.479	0.501	0.523	0.545	0.567	0.589	0.611	50
60	0.611	0.634	0.656	0.678	0.700	0.723	0.745	0.767	0.790	0.812	0.834	60
70	0.834	0.857	0.879	0.902	0.924	0.947	0.969	0.992	1.015	1.037	1.060	70
80	1.060	1.083	1.105	1.128	1.151	1.174	1.196	1.219	1.242	1.265	1.288	80
90	1.288	1.311	1.334	1.357	1.380	1.403	1.426	1.449	1.472	1.496	1.519	90
100	1.519	1.542	1.565	1.588	1.612	1.635	1.658	1.682	1.705	1.729	1.752	100
110	1.752	1.776	1.799	1.823	1.846	1.870	1.893	1.917	1.941	1.964	1.988	110
120	1.988	2.012	2.036	2.060	2.083	2.107	2.131	2.155	2.179	2.203	2.227	120
130	2.227	2.251	2.275	2.299	2.323	2.347	2.371	2.395	2.420	2.444	2.468	130
140	2.468	2.492	2.517	2.541	2.565	2.590	2.614	2.639	2.663	2.687	2.712	140
150	2.712	2.737	2.761	2.786	2.810	2.835	2.860	2.884	2.909	2.934	2.958	150
160	2.958	2.983	3.008	3.033	3.058	3.082	3.107	3.132	3.157	3.182	3.207	160
170	3.207	3.232	3.257	3.282	3.307	3.333	3.358	3.383	3.408	3.433	3.459	170
180	3.459	3.484	3.509	3.534	3.560	3.585	3.610	3.636	3.661	3.687	3.712	180
190	3.712	3.738	3.763	3.789	3.814	3.840	3.866	3.891	3.917	3.943	3.968	190
200	3.968	3.994	4.020	4.046	4.071	4.097	4.123	4.149	4.175	4.201	4.227	200
210	4.227	4.253	4.279	4.305	4.331	4.357	4.383	4.409	4.435	4.461	4.487	210
220	4.487	4.513	4.540	4.566	4.592	4.618	4.645	4.671	4.697	4.724	4.750	220
230	4.750	4.776	4.803	4.829	4.856	4.882	4.909	4.935	4.962	4.988	5.015	230
240	5.015	5.042	5.068	5.095	5.122	5.148	5.175	5.202	5.228	5.255	5.282	240
250	5.282	5.309	5.336	5.363	5.389	5.416	5.443	5.470	5.497	5.524	5.551	250
260	5.551	5.578	5.605	5.632	5.660	5.687	5.714	5.741	5.768	5.795	5.823	260
270	5.823	5.850	5.877	5.904	5.932	5.959	5.986	6.014	6.041	6.068	6.096	270
280	6.096	6.123	6.151	6.178	6.206	6.233	6.261	6.288	6.316	6.343	6.371	280
290	6.371	6.399	6.426	6.454	6.482	6.510	6.537	6.565	6.593	6.621	6.648	290
300	6.648	6.676	6.704	6.732	6.760	6.788	6.816	6.844	6.872	6.900	6.928	300
310	6.928	6.956	6.984	7.012	7.040	7.068	7.096	7.124	7.152	7.181	7.209	310
320	7.209	7.237	7.265	7.294	7.322	7.350	7.378	7.407	7.435	7.463	7.492	320
330	7.492	7.520	7.549	7.577	7.606	7.634	7.663	7.691	7.720	7.748	7.777	330
340	7.777	7.805	7.834	7.863	7.891	7.920	7.949	7.977	8.006	8.035	8.064	340
350	8.064	8.092	8.121	8.150	8.179	8.208	8.237	8.266	8.294	8.323	8.352	350
360	8.352	8.381	8.410	8.439	8.468	8.497	8.526	8.555	8.585	8.614	8.643	360
370	8.643	8.672	8.701	8.730	8.759	8.789	8.818	8.847	8.876	8.906	8.935	370
380	8.935	8.964	8.994	9.023	9.052	9.082	9.111	9.141	9.170	9.200	9.229	380
390	9.229	9.259	9.288	9.318	9.347	9.377	9.406	9.436	9.466	9.495	9.525	390
400	9.525	9.555	9.584	9.614	9.644	9.673	9.703	9.733	9.763	9.793	9.822	400
410	9.822	9.852	9.882	9.912	9.942	9.972	10.002	10.032	10.062	10.092	10.122	410
420	10.122	10.152	10.182	10.212	10.242	10.272	10.302	10.332	10.362	10.392	10.423	420
430	10.423	10.453	10.483	10.513	10.543	10.574	10.604	10.634	10.664	10.695	10.725	430
440	10.725	10.755	10.786	10.816	10.847	10.877	10.907	10.938	10.968	10.999	11.029	440
450	11.029	11.060	11.090	11.121	11.151	11.182	11.213	11.243	11.274	11.304	11.335	450
460	11.335	11.366	11.396	11.427	11.458	11.489	11.519	11.550	11.581	11.612	11.643	460
470	11.643	11.673	11.704	11.735	11.766	11.797	11.828	11.859	11.890	11.920	11.951	470
480	11.951	11.982	12.013	12.044	12.075	12.106	12.138	12.169	12.200	12.231	12.262	480
490	12.262	12.293	12.324	12.355	12.386	12.418	12.449	12.480	12.511	12.543	12.574	490
°F	0	1	2	3	4	5	6	7	8	9	10	°F

**TABLE 18 Type T Thermocouple** — thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
Thermoelectric Voltage in Millivolts												
500	12.574	12.605	12.636	12.668	12.699	12.730	12.762	12.793	12.824	12.856	12.887	500
510	12.887	12.919	12.950	12.982	13.013	13.045	13.076	13.108	13.139	13.171	13.202	510
520	13.202	13.234	13.265	13.297	13.328	13.360	13.392	13.423	13.455	13.487	13.518	520
530	13.518	13.550	13.582	13.614	13.645	13.677	13.709	13.741	13.772	13.804	13.836	530
540	13.836	13.868	13.900	13.932	13.964	13.995	14.027	14.059	14.091	14.123	14.155	540
550	14.155	14.187	14.219	14.251	14.283	14.315	14.347	14.379	14.411	14.444	14.476	550
560	14.476	14.508	14.540	14.572	14.604	14.636	14.669	14.701	14.733	14.765	14.797	560
570	14.797	14.830	14.862	14.894	14.926	14.959	14.991	15.023	15.056	15.088	15.121	570
580	15.121	15.153	15.185	15.218	15.250	15.283	15.315	15.347	15.380	15.412	15.445	580
590	15.445	15.477	15.510	15.543	15.575	15.608	15.640	15.673	15.705	15.738	15.771	590
600	15.771	15.803	15.836	15.869	15.901	15.934	15.967	15.999	16.032	16.065	16.098	600
610	16.098	16.130	16.163	16.196	16.229	16.262	16.295	16.327	16.360	16.393	16.426	610
620	16.426	16.459	16.492	16.525	16.558	16.591	16.624	16.657	16.690	16.723	16.756	620
630	16.756	16.789	16.822	16.855	16.888	16.921	16.954	16.987	17.020	17.053	17.086	630
640	17.086	17.120	17.153	17.186	17.219	17.252	17.286	17.319	17.352	17.385	17.418	640
650	17.418	17.452	17.485	17.518	17.552	17.585	17.618	17.652	17.685	17.718	17.752	650
660	17.752	17.785	17.819	17.852	17.886	17.919	17.952	17.986	18.019	18.053	18.086	660
670	18.086	18.120	18.154	18.187	18.221	18.254	18.288	18.321	18.355	18.389	18.422	670
680	18.422	18.456	18.490	18.523	18.557	18.591	18.624	18.658	18.692	18.725	18.759	680
690	18.759	18.793	18.827	18.861	18.894	18.928	18.962	18.996	19.030	19.064	19.097	690
700	19.097	19.131	19.165	19.199	19.233	19.267	19.301	19.335	19.369	19.403	19.437	700
710	19.437	19.471	19.505	19.539	19.573	19.607	19.641	19.675	19.709	19.743	19.777	710
720	19.777	19.811	19.845	19.879	19.913	19.947	19.982	20.016	20.050	20.084	20.118	720
730	20.118	20.152	20.187	20.221	20.255	20.289	20.323	20.358	20.392	20.426	20.460	730
740	20.460	20.495	20.529	20.563	20.597	20.632	20.666	20.700	20.735	20.769	20.803	740
750	20.803	20.838	20.872									750